

COPPER MINING IN NEWFOUNDLAND.

It may not be generally known to the readers of the *Engineering and Mining Journal* what large quantities of copper ore have been shipped from Newfoundland, especially during the last four or five years. We condense the following from a letter from the special correspondent of the *Montreal Gazette*, dated St. John's, Newfoundland, May 19th :

Bett's Cove copper mine was opened in 1874, under the management of Mr. Ellershausen ; it yielded, in the first four years, 102,400 tons of ore, the value of which was 512,000*l*. The price of copper ore fell to a very low figure towards the close of the year 1878, and a new mine was opened by the Bett's Cove Company at Little Bay, where ore could be extracted at a very moderate expense. Mining operations at Bett's Cove have been since carried on upon a comparatively moderate scale. A staff of 150 or 200 miners was still kept at work, and with remunerative results. Some of the pillars of ore left for the support of the roof along the various galleries were latterly removed as their contents were of great value. When nearly the whole of these pillars were removed, in one particular portion of the workings, on Wednesday, May 5th, just before dusk, those on the surface noticed some alarming symptoms : the ground began to shake, stones rolled down from the cliff and plunged into the lake below. In a few seconds, with an awful crash, the whole top of Bett's Cove Hill fell in, leaving a yawning chasm more than 100 feet deep, where before was solid rock. As the catastrophe had been foreseen, no one was in the workings beneath, all the miners then under ground being in a safe portion of the mine. The machinery which had formerly stood on the portion of the surface which sank had all been removed. Great masses of valuable ore were exposed and rendered accessible, which could only have been reached by great expenditure of time and money. Operations will now be resumed on a larger scale, and a very considerable shipment of ore from Bett's Cove, during the summer, is anticipated.

LITTLE BAY MINE.

This mine was opened in August, 1878, and the anticipations regarding its productiveness have been more than realized. Since the shipping season closed, in December, 1879, about 650 men have been employed, and these have brought to the surface, during the winter, close on to 12,000 tons of good ore, which is now ready for shipment. The first cargo of 200 tons was despatched three days ago. A considerable increase of the working force has been made ; and now that the fine weather has opened, operations will be greatly facilitated. It would be safe to predict that ere the shipping season closes, 15,000 or more, probably 20,000 tons of ore additional, will be extracted, making a total for the year of over 30,000 tons. As the workings deepen, the ore improves in quality, and the extent of the deposit seems even greater than was at first supposed. The Robert's Arm Mine, worked by Mr. Ellershausen on his own account, is also very promising, and extensive works have been erected there. The new mine at Seal Bay, owned by Messrs. Browning & Son and others of St. John's, and leased by them to a wealthy English company on a royalty, promises to equal any of its predecessors. The preliminary operations carried on during the winter are now completed. Various other mining locations are awaiting their turn for examination. Since the first discovery of copper here in 1864, sixteen mines have been opened. Of these, two have been abandoned, five have suspended working from a variety of causes, one is but partially worked, and eight are now in full operation. Mr. Howley, assistant geologist, estimates the total area of the serpentine formation in the island at 5,000 square miles. In his Geological Report for 1875, after a survey of the mining region, Mr. Murray says : "I feel bound to state that the experience of the late investigation convinces me, more than ever, that many of the northern parts of this island, and the great bay of Notre Dame in particular, are destined to develop into great mining centres, should capital and skilled labor be brought to bear in this direction." It must also be borne in mind that copper is not the only mineral found in this island. Lead has been discovered at various places, especially along the west coast ; the equivalent of the auriferous rocks of Nova Scotia are found here, although gold has not yet been discovered ; while in the carboniferous region of Bay St. George and Grand Lake, coal-beds of greater or less extent are known to exist. Borings were made last summer in the neighborhood of Grand Lake, and with such encouraging results that the government has ordered them to be resumed this year. Thus the prospects of an extensive mining industry in Newfoundland are of a very

encouraging character. The progress of copper-mining around Notre Dame Bay is steady. Tilt Cove mine, the workings of which have been suspended from year to year, owing to a misunderstanding between the owners, Messrs. Bennett & McKay, is to be sold next month, by order of the Court of Equity. There are immense deposits of ore there, and should it be purchased by an enterprising individual or company, it is likely we shall hear of extensive operations, requiring a large number of workmen.

NEW MAP OF NEWFOUNDLAND.

Our Provincial Geologist, Alexander Murray, C.M.G., F.G.S., has just brought out a splendid map of Newfoundland, on a large scale, published by Edward Stanford, London. The results of the latest explorations have been embodied in this map ; the routes of the electric telegraph lines, of the projected line of railway from St. John's to St. George's Bay, of "Harvey's Road" from Bay of Islands to the Southwest Arm of Notre Dame Bay, which was recently surveyed, are all accurately laid down. The whole of the Labrador coast from the most recent Admiralty surveys is also depicted. Mr. Murray's name is a sufficient guarantee of its accuracy. The price is four dollars.

A REMARKABLE SURGICAL OPERATION.

For about a year a little girl, ten years of age, has been a patient in the Country Hospital, Chicago, suffering from a burn so extensive that the ordinary treatment by skin grafting hopelessly failed to effect a cure. It was, therefore, decided to try the experiment of transplanting a large section of skin partially detached from a healthy subject, the girl's twelve year old brother consenting to be flayed for his sister's sake. Drs. Lee and Feuger conducted the operation, which is described as follows by a reporter of the *Chicago Tribune* : A curious box had been constructed under the supervision of Dr. Murphy. It resembled nothing more than a pair of scissors opened out, except that one part was about four inches higher than the other. On one face of the cross the little girl was laid face downwards. On the other the boy lay on his side so that his leg crossed his sister, the part of the thigh from which the skin was to be taken being just over the burn of the girl. The children were kept unconscious during the entire operation by the use of ether, and two assistants constantly directed the vapor of carbolic acid on the wounds of both the boy and the girl. The surgeons then cut from the boy's thigh a leaf of skin four inches wide, five inches long, leaving it attached by the under side. The wound of the girl was then cleaned of its decaying matter. The flap of the boy's skin was then laid on the wound and stitch to the outer edge of the skin about the wound, without cutting the edge, which rendered it still a part of the boy's fleshy covering. This was done to secure the vitality of the boy for the skin which is expected to grow to be a part of his exhausted sister. The boy's wound was ugly in appearance, but the skin had been separated, or dissected, so nearly that it will be easy to heal over by the usual process of grafting. The children, as they lay in this position, were so bandaged that they could not possibly tear the flap of skin or move from their position. Thus their dual existence begun, which will last for about three weeks. By that time the success of the operation may be known. During that length of time the boy's vital forces will be in a measure transferred to the assistance of his sister, and, at the end of that time, it is hoped that the transplanting will be complete and the skin firmly grown on the burned portion. The flap is not quite large enough, and, before the skin is finally severed from the boy, a still further portion will be dissected and applied to the remainder of the wound. The little girl's pulse dropped considerable toward the close of the operation, but she was revived by the application to the nostrils of a cloth dipped in brandy. The operation was a success as far as it went, and, if nature takes hold in the manner expected, the brave boy can congratulate himself on having saved his sister's life.

THE "CASA DEL CENTENARIO" AT POMPEII. The Naples correspondent of the *Daily News* writes : "The house which has begun to be excavated at the celebration of the centenary of Pompeii, and is, therefore, called 'Casa del Centenario,' and from which I then saw three skeletons dug out, has proved to be the largest hitherto discovered, and is of peculiar interest. It contains two atria, two triclinia, four alae or wings, a calidarium, frigidarium, and tepidarium. It occupies the entire space between three streets, and most likely a fourth which has yet to be excavated. The vestibule is elegantly decorated, and its Mosaic